Name: Erifeoluwa Jamgbadi

Answers to/solutions of the single exercises in the assignment

Created a function like the loadStepsByHour, except these functions load the steps by day. I selected the day data from the database and used that to create the chart. The below image can be found in GalleryViewModel.java.

```
public static Map<Integer, Integer> loadStepsByDay(Context context, String date){
    // 1. Define a map to store the hour and number of steps as key-value pairs
    Map<Integer, Integer>  map = new HashMap<> ();

    // 2. Get the readable database
    GalleryViewModel databaseHelper = new GalleryViewModel(context);
    SQLiteDatabase database = databaseHelper.getReadableDatabase();

    // 3. Define the query to get the data
    Cursor cursor = database.rawQuery( sql: "SELECT day, COUNT(*)  FROM num_steps " +
            "WHERE day = ? GROUP BY day ORDER BY  day ASC ", new String [] {date});

    // 4. Iterate over returned elements on the cursor
    cursor.moveToFirst();
    for (int index=0; index < cursor.getCount(); index++){
        Integer tmpKey = Integer.parseInt(cursor.getString( i: 0));
        Integer tmpValue = Integer.parseInt(cursor.getString( i: 1));

        //2. Put the data from the database into the map
        map.put(tmpKey, tmpValue);


        cursor.moveToNext();
    }

    // 5. Close the cursor and database
    cursor.close();
    database.close();

    // 6. Return the map with hours and number of steps
    return map;
}
```

Next in function below which creates the chart, I called the function above and assigned it to a variable. The below code can be found in DayFragment.java

```java
public Cartesian createColumnChart(){
    //***** Read data from SQLiteDatabase *********/
    // TODO 1: Get the map with hours and number of steps for today
    //  from the database and initialize it to variable stepsByHour
    //  hint: use the current_time variable for today's date

    stepsByDay = GalleryViewModel.loadStepsByDay(getContext(), current_time);


    // TODO 2: Creating a new map that contains date from 0 to 23 and
    //  number of steps during each hour set to 0

    TreeMap<Integer,Integer> graph_map = new TreeMap<~>();
    for(int i = 0; i < 24; i++){
        graph_map.put(i, 0);
    }


    // TODO 3: Replace the number of steps for each day in graph_map
    //  with the number of steps read from the database
    graph_map.putAll(stepsByDay);
```

I also created a fragment_day.xml file, which has the code for the visual of the chart on the screen. I gave the chart an id dayBarChart.

fragment_day.xml | DayFragment.java

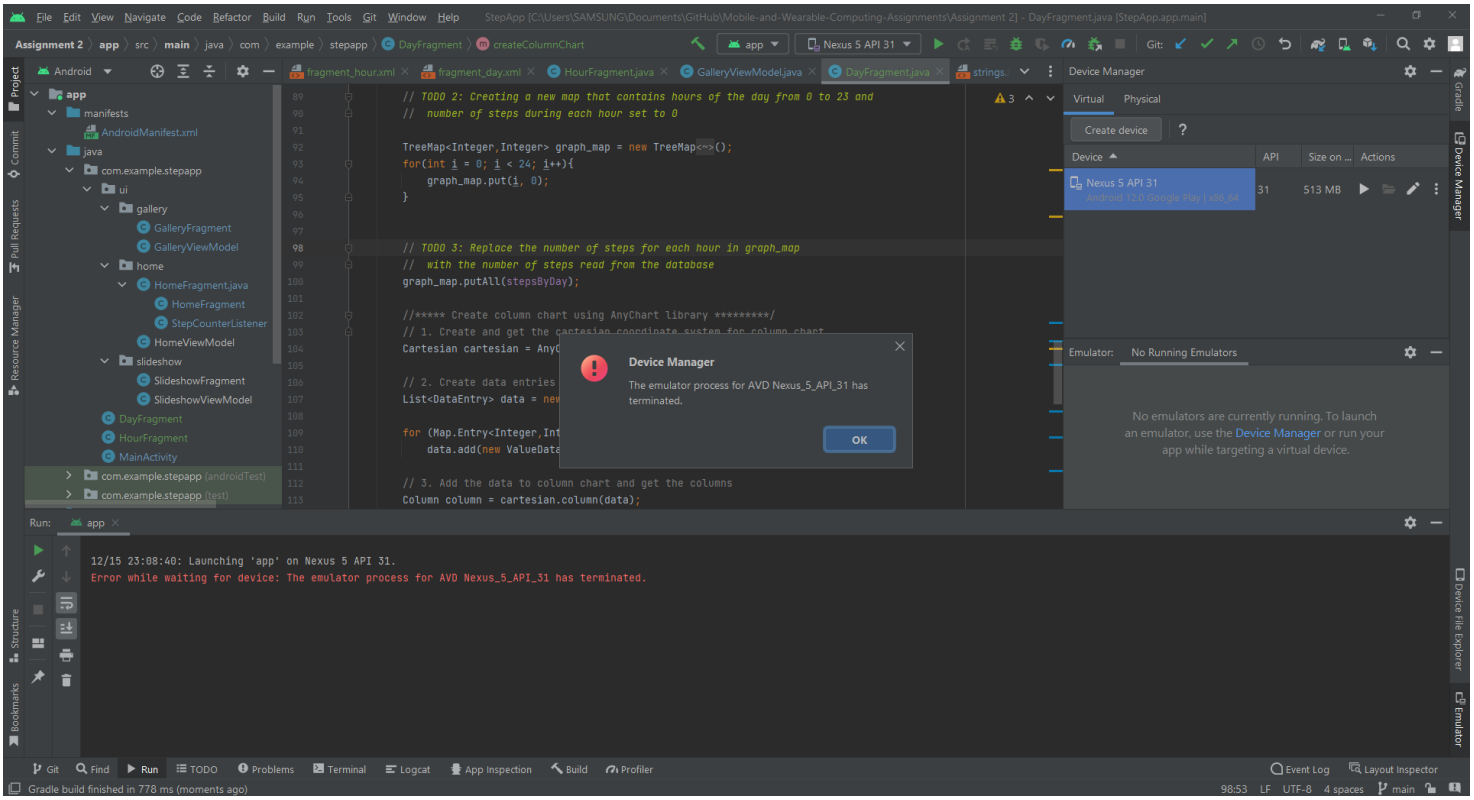
```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/ap
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".DayFragment">

    <com.anychart.AnyChartView
        android:id="@+id/dayBarChart"
        android:layout_width="match_parent"
        android:layout_height="300dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.31" />


    <ProgressBar
        android:id="@+id/loadingBar"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintVertical_bias="0.4"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        />
```

Screenshots of the App

Couldn’t display because my emulator doesn’t work for the android studio.



URL for your code repository

https://github.com/erifejams/Mobile-and-Wearable-Computing-Assignments/tree/main/Assignment%202